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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

GARCIA OTERO, EDUARDO

ART UNIT	PAPER NUMBER
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2123

DATE MAILED: 02/11/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application N .

09/532,977

Applicant(s)

FAIRMAN, RUBEN E.

Examiner

Eduardo Garcia-Otero

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 January 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION: Final Action

Introduction

1. Title is: METHODS AND SYSTEMS FOR GENERATING PROFILE CURVES OF SOLID MODELS.
2. First named inventor is: FAIRMAN.
3. Claims 1-20 have been submitted, examined, and rejected.
4. This action is in response to Applicant's Amendment and drawings received 1/20/04, which are accepted without objection.
5. Application was filed 3/22/00, and no earlier priority is claimed.

Index of Prior Art

6. **Solid Edge** refers to Solid Edge User's Guide Version 7, MU28900-ENG, Unigraphics Solutions™, 1999, pages 2, and 30-51.
7. **Graham** refers to INSIDE Pro/ENGINEER Solutions, Gary Graham et al., Onworld Press, 1999, pages 76-80.
8. **Beaton** refers to US Patent 6,039,131.

Applicant's Remarks

9. ADDITIONAL DRAWINGS--REQUIREMENT PARTIALLY SATISFIED. The Examiner appreciates the excellent new drawings (FIG 4-7) that were furnished in response to a requirement in the prior office action. Applicant traverses the requirement for new drawings.
10. Applicant inaccurately describes the drawings as "replacement drawing sheets", and has written "replacement sheets" on the drawings, apparently referring to MPEP 714(III)(5). However, the term "replacement sheets" implies that some previous version of the drawing is being amended. The Examiner suggests deleting the term "replacement sheets" when formal drawings are submitted.
11. Said drawings are new drawings required under 35 USC 113 and under 37 CFR 1.81. The Examiner notes that said drawings do not contain new matter, but merely clarify old matter.
12. However, the drawing discussed at paragraph 35 of the prior office action has not been provided. Specifically, the drawing should illustrate the "**known profile curve generators**" discussed at specification page 1 line 17 to page 2 line 5, and should be labeled "prior art". Note that such drawings may prove very useful in supporting Reasons for Allowance in

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future office actions. The unsatisfied portion of the requirement for additional drawings is repeated below.

13. 35 USC 101. The rejections for non-statutory subject matter are withdrawn due to amendments.
14. 35 USC 112--WITHDRAWN. All prior 35 USC 112 rejections are withdrawn due to Applicant's amendments and persuasive assertion.

Drawings--additional drawings required

15. "The applicant shall furnish a drawing where necessary for the understanding of the subject matter to be patented" 35 USC 113. Applicant is required to furnish a drawing under 37 CFR 1.81. No new matter may be introduced in the required drawing.
16. Specifically, the Examiner requires a drawing or set of drawings to illustrate the prior art "known profile curve generators" discussed at specification page 1 line 17 to page 2 line 5, and should be labeled "prior art". Such a prior art drawing is necessary to understand and distinguish the novel or non-obvious aspects of the claimed invention. Note that *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), requires determining the scope and contents of the prior art, and ascertaining the differences between the prior art and the claims at issue. Failure to provide said drawings in Applicant's response will be interpreted as nonresponsive.

Claim Interpretation

17. In claim 1 (amended) limitation [4], the term "the profile curve" is interpreted as "the single equivalent profile curve", with antecedent basis in limitation [3] term "a single equivalent profile curve".
18. Similarly in claim 1 (amended) limitation [1], the term "the three dimensional solid" is interpreted as "the revolved three dimensional solid", with antecedent basis in the preamble term "a revolved three-dimensional solid". Note that the preamble word "revolved" is thus necessary to breathe life into the claim limitations, and is not a mere intended use.

35 USC § 112-Second Paragraph-indefinite claims

19. The following is a quotation of the second paragraph of 35 U.S.C. 112: The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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20. **Claims 1-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite** for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
21. In claim 1 (amended), the term “**generating** a single equivalent profile curve” is indefinite.
22. In claim 2, the term “**identifying** a seed revolved edge” is indefinite. Note that according to Specification page 4, and Applicant’s amendment top of page 3, the revolved faces are generated before identifying the seed revolved edge.
23. In view of the specification and the clarifying amendments and drawings, the disclosed invention appears to include (and to require) the following steps in the following order:
- A-identify a plurality of revolved faces on the three-dimensional revolved solid.
 - B-select one of the revolved faces as a seed face.
 - C-starting with the seed face, identify adjacent revolved faces in a loopwise sequence forming a contiguous set of revolved faces until returning to the seed face.
 - D-identify the edge of the last adjacent revolved face with the seed face (the end of the loop) as a seed revolved edge.
 - E-starting with the seed revolved edge, generate profile curves representing the profile of each contiguous revolved face in a loopwise sequence until returning to the seed edge.
24. However, the above discussion appears inconsistent with FIG 2, which apparently begins by querying solid edges until a revolved edge results. The Examiner suggests amending FIG 2 to match the above A-E
25. Claims 3-20 are rejected for the same reasons.

Response to Amendments or new IDS-FINAL OFFICE ACTION

26. Applicant's amendments or new IDS necessitated the new ground(s) of rejection presented in this Office action. Accordingly, THIS ACTION IS MADE FINAL. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a). A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will

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expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Additional Cited Prior Art

27. The following US patents or publications are hereby cited as prior art, but have not been used for rejection. Applicant should review these carefully before responding to this office action.
28. US Patent 5,745,666 Abstract discloses “parametric surface representation of the three dimensional graphics model into a two-dimensional parametric space”, US Patent Application 6,219,444 Abstract discloses “two dimensional images representing scenes of three dimensional spaces”, and US Patent 6,308,144 discloses “two-dimensional sketcher plane”.

Conclusions and Potential Allowable Subject Matter

29. REJECTIONS. All claims stand rejected under 35 USC 112 second paragraph.
30. ALLOWABLE MATTER. The original disclosure appears to contain potentially allowable material. Specifically, Applicant’s method of finding the profile of a revolved three-dimensional solid appears non-obvious. Generally said profiles are found by the intersection of a plane extended from the axis of symmetry, and Applicant’s method does not use intersecting planes. Note that Solid Edge page 32-33 uses a reference plane to form an intersection curve by intersecting two surfaces.
31. However, several hurdles must be overcome before allowance:
32. CLAIMS. First, the claims must particularly point out and distinctly claim the invention. The Examiner suggests deleting the claim 1 limitation “generating...”, and then substituting the following limitations:
- A-identify a plurality of revolved faces on the three-dimensional revolved solid.
 - B-select one of the revolved faces as a seed face.
 - C-starting with the seed face, identify adjacent revolved faces in a loopwise sequence forming a contiguous set of revolved faces until returning to the seed face.

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- D-identify the edge of the last adjacent revolved face with the seed face (the end of the loop) as a seed revolved edge.
 - E-starting with the seed revolved edge, generate profile curves representing the profile of each contiguous revolved face in a loopwise sequence until returning to the seed edge.
33. If claim 1 were amended in said fashion, while retaining the other present three limitations (selecting, inputting, outputting), then it would be allowable. Claim 4 would be allowable if dependent upon said claim 1. Claim 5 depends from claim 4. Claim 6 depends from claim 5. Claims 2 and 3 should be deleted because their limitations are absorbed into claim 1. Claims 7-20 should be amended or deleted in similar fashion.
34. DRAWINGS. Second, the outstanding requirement for certain drawings should be satisfied. Third, FIG 2 should be amended to be consistent with the rest of the specification, as discussed above.

Communication

35. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eduardo Garcia-Otero whose telephone number is 703-305-0857. The examiner can normally be reached on Tuesday through Friday from 9:00 AM to 8:00 PM. If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Kevin Teska, can be reached at (703) 305-9704. The fax phone number for this group is 703-872-9306. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the group receptionist, whose telephone number is (703) 305-3900.

* * * *



KEVIN J. TESKA
SUPERVISORY
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